Chapter 21.64

CRITICAL AREAS REGULATIONS

Sections:

21.64.010 Critical Areas.

A. Purpose. The purposes of this chapter are to:

1. Preserve the City's important environmental features while allowing development to occur if compatible with and in consideration of these critical areas;

2. Assure the conservation and protection of critical areas from loss or degradation by classifying and designating the same and to restrict land uses and development which are incompatible with environmentally critical areas;

3. Achieve no net loss of core preservation areas within fish and wildlife habitat conservation areas, which includes riparian corridors, and minimize impact to and retain character of quality habitat areas, and protect species of concern, priority species, and species of local importance;

4. Avoid wetland impacts and achieve a goal of no net loss of wetland function, value, and acreage; and where possible enhance and restore wetlands;

5. Achieve no net loss of structure, value, and functions of natural systems within frequently flooded areas and to employ no net impact floodplain management in

order to avoid impacts to upstream and downstream properties and substantial risk and damage to public and private property and loss of life;

6. Protect critical aquifer recharge areas by avoiding land use activities that pose potential contamination, and minimize impacts to recharge areas through the application of strict performance standards;

7. Avoid and minimize potential impacts to life and property from geologic hazards such that sites are rendered as safe as one not containing such hazard through appropriate levels of study and analysis, application of sound engineering principles, and regulation or limitation of land uses;

8. Avoid impacts to critical areas and preserve the functions of critical areas. In appropriate circumstances, impacts to specified critical areas resulting from regulated activities may be minimized, rectified, reduced, and/or compensated for, consistent with the requirements of this chapter;

9. By limiting development and alteration of critical areas:

a. Protect members of the public and public resources and facilities from injury, loss of life, or property damage due to landslides and steep slope failures, erosion, seismic events, or flooding;

b. Protect unique, fragile, and valuable elements of the environment, including ground and surface waters, wetlands, and fish and wildlife and their habitats;

c. Direct activities not dependent on critical area resources to less ecologically sensitive sites and mitigate unavoidable impacts to critical areas by regulating alterations in and adjacent to critical areas; and

d. Prevent cumulative adverse environmental impacts to water quality, wetlands, and fish and wildlife habitat, and the overall net loss of wetlands, frequently flooded areas, and habitat conservation areas;

10. Provide standards, guidelines, and criteria to guide application of these critical areas goals and policies when considered with other goals and policies of the RZC, including those pertaining to natural features and environmental protection;

11. Serve as a basis for exercise of the City's substantive authority under the State Environmental Policy Act (SEPA) and the City's SEPA rules;

12. Protect critical areas in accordance with the Growth Management Act and through the application of best available science, as determined according to

WAC 365-195-900 through 365-195-925, and in consultation with state and federal agencies and other qualified professionals; and

13. Coordinate environmental review and permitting of proposals to avoid duplication and delay.

B. Findings. The City finds that:

1. Redmond contains certain areas that can be identified and characterized as environmentally sensitive or critical. Such areas within the City include fish and wildlife habitat conservation areas, wetlands, frequently flooded areas, geologically hazardous areas, and critical aquifer recharge areas and their associated buffers.

2. Past growth patterns have in some cases contributed in natural disasters which threaten public health and safety, and that by preventing development on certain critical areas the City can better maintain public health, safety and welfare. In addition, by preserving features that provide for clean water, fisheries, and wildlife, the City can help maintain a positive ecological balance that provides for the immediate and long-term public welfare.

3. Critical areas perform a variety of valuable and beneficial biological and physical functions that benefit the City and its residents. Some types of critical areas may also pose a threat to human safety or to public and private property. The functions of critical areas include the following:

a. Fish and Wildlife Habitat Conservation Areas. Wildlife areas are ecosystem composed of unique interacting systems of soils, geology, topography, and plant and animal communities. They consist of land-based areas and aquatic areas. Wildlife habitat provides opportunities for food, cover, nesting, breeding, and movement for fish and wildlife within the City; maintains and promotes diversity of species and habitat within the City; helps to maintain air and water quality; controls erosion; serves as areas for recreation, education and scientific study, and aesthetic appreciation; and provides neighborhood separation and visual diversity within urban areas. Riparian corridors are essential for wild fish populations. Healthy riparian zones are dynamic ecosystems that perform various functions that form salmonid habitat. Some of the major functions include: producing and delivering large and small woody debris to shorelines and stream channels; shoreline protection and habitat formation; removing sediments and dissolved chemicals from water; moderating water temperature; providing favorable microclimate; providing habitat for terrestrial animals; and providing proper nutrient sources for aquatic life. Additionally, aquatic areas and their associated buffers store and convey stormwater and floodwater; recharge groundwater; and serve as areas

for recreation, education and scientific study and aesthetic appreciation. The City's overall goal shall be no net loss of riparian corridor functions and values.

b. Wetlands. Wetlands are fragile ecosystems which serve a number of important beneficial functions. Wetlands assist in the reduction of erosion, siltation, flooding, ground and surface water pollution, and provide wildlife, plant, and fisheries habitats. Wetlands destruction and impairment may result in increased public and private costs or property losses. Wetland buffers serve to moderate runoff volume and flow rates; reduce sediment, chemical nutrient and toxic pollutants; provide shading to maintain desirable water temperatures; provide habitat for wildlife; protect wetland resources from harmful intrusion; and generally preserve the ecological integrity of the wetland area.

c. Frequently Flooded Areas. Floodplains and other areas subject to flooding perform important hydrologic functions and may present a risk to persons and property. Floodplains help to store and convey storm water and flood water; recharge ground water; provide important areas for riparian habitat; and serve as areas for recreation, education, and scientific study. Development within floodplain areas can be hazardous to those inhabiting such development, and to those living upstream and downstream. Floods also cause substantial damage to public and private property that result in significant costs to the public and individuals.

d. Critical Aquifer Recharge Areas. Potable water is an essential life-sustaining element. Aquifer recharge areas provide a source of potable water and contribute to stream discharge during periods of low flow. Certain portions of the City's planning area are susceptible to contamination of drinking water and watercourse supplies through rapid infiltration of pollutants through the soil to ground water aquifers. Critical Aquifer Recharge Areas I and II are designated under the provisions of the Growth Management Act, RCW Chapter 36.70A, and are established based on proximity to and travel time of groundwater to the City's public water source wells.

e. Geologically Hazardous Areas. Geologically hazardous areas include areas susceptible to erosion, sliding, earthquake, or other geological events. They pose a threat to the health and safety of citizens when incompatible commercial, residential, or industrial development is sited in or near areas of significant hazard. Some geological hazards can be reduced or mitigated by engineering, design, or modified construction so that risks to health and safety are acceptable. When technology cannot reduce risks to acceptable levels, building in geologically hazardous areas should be avoided.

4. Identification, regulation, and protection of critical areas are necessary to protect the public health, safety, and general welfare.

5. This section of the RZC contains standards, guidelines, criteria, and requirements intended to identify, analyze, preserve, and mitigate potential impacts to the City's critical areas and to enhance and restore degraded resources, such as wetlands, riparian stream corridors, or habitat, where possible.

C. Applicability - Regulated Activities.

1. The provisions of this chapter shall apply to any activity that has a potential to significantly adversely impact a critical area or its established buffer unless otherwise exempt. Such activities include but are not limited to:

a. Removing, excavating, disturbing, or dredging soil, sand, gravel, minerals, organic matter, or materials of any kind;

b. Dumping, discharging, or filling with any material;

c. Draining, flooding, or disturbing the water level or water table;

d. Driving pilings or placing obstructions;

e. Constructing, reconstructing, demolishing, or altering the size of any structure or infrastructure that results in disturbance of a critical area or the addition of any impervious surface coverage to a site;

f. Destroying or altering vegetation through clearing, grading, harvesting, shading, or planting vegetation that would alter the character of a critical area;

g. Activities that result in significant changes in water temperature and physical or chemical characteristics of water sources, including quantity and pollutants; and

h. Any other activity that has a potential to significantly adversely impact a critical area or established buffer not otherwise exempt from the provisions of this chapter;

i. With regard to frequently flooded areas, the provisions of this chapter shall apply to any activity that would result in change to the flood storage capacity of a floodplain or flood fringe area, or cause an increase in the base flood elevation, unless otherwise exempt.

2. To avoid duplication, Types I, II, III, IV, V, and VI Permits shall be subject to and coordinated with the requirements of this chapter.

3. For the purposes of this chapter, "Department" shall mean the City of Redmond Department of Planning and Community Development and "Committee" shall mean the City of Redmond Technical Committee.

D. Exemptions.

1. The following activities shall be exempt from the provisions of this chapter:

a. Existing and ongoing agricultural activities provided no alteration of flood storage capacity or conveyance occurs and the activity does not adversely affect critical areas, and existing and ongoing agricultural activities identified in a farm plan approved by both the King County Conservation District and the City;

b. Activities involving artificially created wetlands or streams intentionally created from non-wetland sites, including but not limited to grass-lined swales, irrigation and drainage ditches, detention facilities, and landscape features, except wetlands, streams, or swales created as mitigation or that provide habitat for salmonid fishes;

c. Activities occurring in areas of 40 percent slope or greater with a vertical elevation change of up to 10 feet based upon City review of a soils report prepared by a geologist or geotechnical engineer which demonstrates that no significant adverse impact will result from the exemption. In addition, the construction of a single-family dwelling unit in man-made steep slopes which were created as part of an approved legal grading activity shall be exempt provided the applicant submits documentation from a qualified professional that the slope was man-made and there will be no resulting significant adverse impacts. This latter exemption applies to one stand-alone single-family residence and is not to be construed to apply to a series of proposed dwellings as part of a subdivision or short plat application;

d. Normal and routine maintenance, operation and reconstruction of existing roads, streets, utilities, and associated rights-of-way and structures, provided that reconstruction of any structures may not increase the impervious area, remove flood storage capacity, or further encroach into a critical area or its buffer;

e. Normal maintenance and repair, and reconstruction or remodeling of residential or commercial structures, or legal pre-existing and ongoing uses of the site, provided that reconstruction of any structures may not increase the size of the previously approved building footprint (see subsection D.5 of this section);

f. Site investigative work and studies necessary for preparing land use applications, including soils tests, water quality studies, wildlife studies and similar tests and investigations, provided that any disturbance of the critical area shall be the minimum necessary to carry out the work or studies and provided that the area is restored to its previous condition;

g. Educational activities, scientific research, and outdoor recreational activities, including but not limited to interpretive field trips, and bird watching that will not have a significant adverse effect on the critical area;

h. Emergency activities necessary to prevent an immediate threat to public health, safety, or property. Once the immediate threat has been addressed, any adverse impacts on critical areas shall be minimized and mitigated as noted in (2) below;

i. Normal and routine maintenance and operation of existing landscaping and gardens provided they comply with all other regulations in this chapter;

j. Construction of pedestrian trails which are permeable, have a maximum width of six feet, and are located in the outer 25 percent of the buffer;

k. Minor activities not mentioned above and determined by the Department to have minimal impacts to a critical area;

l. Previously legally filled wetlands or wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway, or wetlands accidentally created by other human actions within 20 years of the date the development application is filed. The latter shall be documented by the applicant through photographs, statements, and/or other evidence;

m. Activities affecting Category IV wetlands which are 250 square feet in size or smaller and hydrologically isolated;

n. Installation, construction, replacement, repair, or alteration of utilities and their associated facilities, lines, pipes, mains, equipment, or appurtenances in improved City road rights-of-way and provided that the area is restored to its previous condition;

o. Removal of nonnative vegetation providing removal is accomplished using hand methods and that removal is in compliance with this chapter. Hand removal does not include using mechanical equipment, such as weed wackers, mowers, power hedge trimmers, or other similar devices. Also, this does not include the use of herbicides.

2. Notwithstanding the exemptions provided by this section, any otherwise exempt activities occurring in or near a critical area should meet the purpose and intent of RZC 21.64.010.A and should consider on-site alternatives that avoid or minimize significant adverse impacts.

3. Exempt activities occurring in flood hazard areas shall not alter flood storage capacity or conveyance.

4. With the exception of subsections D.1.a, D.1.g, D.1.h, and D.1.i of this section, and normal maintenance and repair of residential and commercial structures as in subsection D.1.e of this section, no property owner or other entity shall undertake exempt activities prior to providing 10 days' notice to the Department. In case of any question as to whether a particular activity is exempt from the provisions of this section, the Department's determination shall prevail and shall be confirmed in writing within 10 days of receipt of the owner's or applicant's letter. Those persons performing emergency activities falling under subsection D.1.h of this section shall provide telephone or written communication with the Department within 48 hours of the activity notifying such emergency activity was taken.

5. Structures shall be allowed to be reconstructed if destroyed by more than 50 percent of its assessed or appraised value, whichever is greater, if located in a buffer. Reconstruction of the structure shall not further encroach into the buffer area or increase the building footprint. Structures that are nonconforming solely due to the provisions of this chapter shall not be governed by RZC 21.76.100.F, Legal Nonconforming Uses and Structures.

E. Critical Areas Maps.

1. Critical Areas Generally. The following critical areas maps are adopted and included as a part of this chapter:

a. Fish and Wildlife Habitat Conservation Areas (Map 64.1);

b. Critical Wildlife Habitat Map Willows/Rose Hill Neighborhood (Map 64.2);

c. Streams (Map 64.3);

d. Wetlands (Map 64.4);

e. Frequently Flooded Areas (Map 64.5);

f. Critical Aquifer Recharge Areas (Map 64.6);

g. Landslide Hazard Areas (Map 64.7);

h. Erosion Hazard Areas (Map 64.8);

i. Seismic Hazard Areas (Map 64.9); and

j. Critical Aquifer Recharge Areas Full Extent (Map 64.10).

2. These maps shall be used as a general guide only for the assistance of property owners and other interested parties; boundaries are generalized. The actual type, extent, and boundaries of critical areas shall be determined in the field by a qualified consultant according to the procedures, definitions, and criteria established by this chapter. In the event of any conflict between the critical area location and designation shown on the City's map and the criteria or standards of this section, the criteria and standards shall prevail.

F. Relationship to Other Regulations.

1. These critical area regulations shall apply as an overlay and in addition to zoning, land use, and other regulations established by the City of Redmond. In the event of any conflict between these regulations and any other regulations of the City, the regulations which provide greater protection to environmentally critical areas shall apply.

2. Areas characterized by particular critical areas may also be subject to other regulations established by this chapter due to the overlap or multiple functions of some sensitive or critical areas. Wetlands, for example, may be defined and regulated according to the wetland and fish and wildlife habitat conservation area provisions of this chapter. In the event of any conflict between regulations for particular critical areas in this chapter, the regulations which provide greater protection to environmentally critical areas shall apply.

3. Compliance with the provisions of this chapter does not constitute compliance with other federal, state, and local regulations and permit requirements that may be required.

G. Permit Process and Application Requirements.

1. Pre-Application Conference. All applicants are encouraged to meet with the City prior to submitting an application subject to this section. The purpose of this meeting shall be to discuss the City's critical area requirements, processes and procedures; to review any conceptual site plans prepared by the applicant; to identify potential impacts to critical areas and appropriate mitigation measures; and to generally inform the applicant of any federal or state regulations applicable to the subject critical area. Such conference shall be for the convenience of the applicant and any recommendations shall not be binding on the applicant or the City. The pre-application conference provided for in this section shall be consolidated with any pre-application conference held on any land use permit application.

2. Application Requirements.

a. Timing of Submittals. A critical areas report, if applicable, must be submitted to the City during application submittal. This is a required component of determining application completeness. The purpose of the report is to determine the extent, characteristics, and functions of any critical areas located on or that have a potential to be significantly adversely impacted by activities on a site where regulated activities are proposed. The report will also be used by the City to assist in the determination of the appropriate critical area rating and establishment of appropriate buffer requirements in accordance with this chapter.

b. Critical Areas Report Contents. Reports and studies required to be submitted by this chapter shall contain the information indicated in RZC Appendix 1, Critical Areas Reporting Requirements, applicable to each critical area.

3. Consultant Qualifications and City Review. All reports and studies required of the applicant by this section shall be prepared by a qualified consultant as that term is defined in the 21.50.010, Definitions. The City may, at its discretion and at the applicant's expense, retain a qualified consultant to review and confirm the applicant's reports, studies, and plans.

4. Permit Process. This section is not intended to create a separate critical areas permit process for development proposals. The City shall consolidate and integrate the review and processing of critical areas aspects of proposals with other land use and environmental considerations and approvals.

H. Alteration or Development of Critical Areas - Standards and Criteria. Standards and criteria are set forth in subsequent sections of this chapter.

I. General Mitigation Standard.

1. All significant adverse impacts to critical areas functions and values shall be mitigate. Mitigation actions by an applicant or property owner shall occur in the following sequence:

a. Avoiding the impact altogether by not taking a certain action or parts of actions;

b. Minimizing impacts by limiting the degree or magnitude of the action and it implementation, by using appropriate technology, or by taking affirmative steps such as project redesign, relocation, or timing, to avoid or reduce impacts;

c. Rectifying the impact to the critical area by repairing, rehabilitating, or restoring the affected environment to the conditions existing at the time of the initiation of the project;

d. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action;

e. Compensating for the impact by replacing or providing substitute resources or environments; and/or

f. Monitoring the hazard or other required mitigation and taking remedial action when necessary.

J. Other Appropriate Mitigation Actions. Where impacts cannot be avoided and the applicant has exhausted feasible design alternatives, the applicant or property owner shall seek to implement other appropriate mitigation actions in compliance with the intent, standards, and criteria of this chapter. In an individual case, these actions may include consideration of alternative site plans and layouts, reductions in the density or scope of the proposal, and/or implementation of the performance standards listed in subsequent sections of this chapter.

K. Proposed Developments. Development proposed in critical areas shall incorporate and reflect the performance standards contained in subsequent sections of this chapter.

L. Mitigation Standards, Criteria, and Plan Requirements.

1. Mitigation Performance Standards. Significant adverse impacts to critical area functions and values shall be mitigated. Mitigation actions shall be implemented in the preferred sequence identified in RZC 21.64.010.I. General Mitigation Standard, which include less preferred and/or compensatory mitigation shall demonstrate that:

a. All feasible and reasonable measures will be taken to reduce impacts and losses to the critical area or to avoid impacts where avoidance is required by these regulations; and

b. The restored, created or enhanced critical area or buffer will be as viable and persistent as the critical area or buffer area it replaces; and

c. In the case of wetlands and riparian stream corridors, no overall net loss will occur in wetland or riparian stream corridor functions and values.

2. Location and Timing of Mitigation.

a. Mitigation shall be provided on-site, unless on-site mitigation is not scientifically feasible due to physical features of the property. The burden of proof shall be on the applicant to demonstrate that mitigation cannot be provided on-site.

b. When mitigation cannot be provided on-site, mitigation shall be provided in the immediate vicinity of the permitted activity on property owned or controlled by the applicant, such as an easement, provided such mitigation is beneficial to the critical area and associated resources. Credits from a state certified wetland mitigation bank may be used to compensate for wetland impacts consistent with i. below.

c. In-kind mitigation shall be provided except when the applicant demonstrates and the Department concurs that greater functional and habitat value can be achieved through out-of-kind mitigation.

d. Only when it is determined by the Department that subsections L.2.a, L.2.b, and L.2.c of this section are inappropriate and impractical, shall off-site, out-of-kind mitigation be considered.

e. When wetland or riparian stream corridor mitigation is permitted by these regulations on-site or off-site, the mitigation project shall occur near an adequate water supply (river, stream, ground water, stormwater facility outfall) with a hydrologic connection to the critical area to ensure successful development or restoration.

f. Any agreed upon mitigation proposal shall be completed concurrently with project construction, unless a phased schedule that assures completion prior to occupancy has been approved by the Department.

g. Wetland acreage replacement ratios shall be as specified in RZC 21.64.030.C.7.b, Wetland Replacement Ratios.

h. Restored or created riparian stream corridors, where permitted by these regulations, shall be an equivalent or higher riparian stream corridor value or function than the altered riparian stream corridor.

i. All off-site mitigation shall be provided within the Redmond city limits.

M. Performance Standards for Mitigation Planning. The performance standards noted in subsequent sections of this chapter shall be incorporated into mitigation plans submitted to the City for impacts to critical areas. Mitigation plans shall contain the information indicated in RZC Appendix 1, Critical Areas Reporting Requirements.

N. Approved Mitigation Projects - Signature. On completion of construction, any approved mitigation project must be signed off by the applicant's qualified consultant and approved by the Department. Signature will indicate that the construction has been completed as planned.

O. Approved Mitigation Projects - Contingency Planning. Approved mitigation projects shall implement the monitoring and contingency planning requirements of RZC 21.64.010.P below.

P. Monitoring Program and Contingency Plan.

1. A monitoring program shall be implemented by the applicant to determine the success of the mitigation project and any necessary corrective actions. This program shall determine if the original goals and objectives are being met.

2. A contingency plan shall be established for correction in the event that the mitigation project is inadequate or fails. A performance and maintenance bond or other acceptable security device is required to ensure the applicant's compliance with the terms of the mitigation agreement. The bond or other security shall meet the requirements set forth in RZC 21.76.090.F, Performance Assurance.

3. Monitoring programs prepared to comply with this chapter shall reflect the following guidelines:

a. Use scientific procedures for establishing the success or failure of the project;

b. For vegetation determinations, permanent sampling points shall be established;

c. Vegetative success equals 80 percent per year survival of planted trees and 80 percent cover of shrubs, groundcover, and emergent species, and less than 20 percent cover of invasive species;

d. Submit monitoring reports on the current status of the mitigation project to the Department. The reports are to be prepared by a qualified consultant and reviewed by the City, and shall be produced on the following schedule: 30 days after planting, early in the growing season of the second year, end of the growing season of the second year, and annually thereafter;

e. The monitoring reports shall contain the following information on monitoring method and monitoring components, as relevant:

i. Vegetation Monitoring: Methods shall include counts, photo points, random sampling, sampling plots, transects, visual inspections, and/or

other means deemed appropriate by the Department and a qualified consultant. Vegetation monitoring components shall include general appearance, health, mortality, colonization rates, percent cover, percent survival, volunteer plant species, invasive weeds, and/or other components deemed appropriate by the Department and a qualified consultant.

ii. Water Quantity Monitoring: Methods shall include piezometers, sampling points, stream gauges, visual observation, and/or other means deemed appropriate by the Department and a qualified consultant. Water quantity monitoring components shall include water level, peak flows, soil saturation depth, soil moisture within root zone, inundation, overall water coverage, and/or other components deemed appropriate by the Department and a qualified consultant.

iii. Water Quality Monitoring: Methods shall include testing, plant indicators, and/or other means deemed appropriate by the Department and a qualified consultant. Water quality monitoring components shall include temperature, pH, dissolved oxygen, total suspended solids, total metals, herbicides, pesticides, and/or other components deemed appropriate by the Department and a qualified consultant.

iv. Wildlife Monitoring: Methods shall include visual sightings, aural observations, nests, scat, tracks, and/or other means deemed appropriate by the Department and a qualified consultant. Wildlife monitoring components shall include species counts, species diversity, breeding activity, habitat type, nesting activity, location, usage, and/or other components deemed appropriate by the Department and a qualified consultant.

v. Geomorphic Monitoring: Methods shall include cross-sectional surveys, profile surveys, point surveys, photo-monitoring, and/or other means deemed appropriate by the Department and a qualified consultant. Monitoring components shall include location and effect of large woody debris, depth and frequency of pools, bank erosion, channel migration, sediment transport/deposition, structural integrity of weirs, and/or other components deemed appropriate by the Department and a qualified consultant.

f. Monitoring programs shall be established for a minimum of five years to ensure the performance standards have been met. The project mitigation plan shall include monitoring elements such as those identified above, that ensure certainty of success for the project's natural resource values and functions. If the mitigation goals are not obtained within the initial five-year period, the applicant remains responsible for restoration of the natural resource values

and functions until the mitigation goals agreed to in the mitigation plan are achieved;

g. If necessary, correct for failures in the mitigation project;

h. Replace dead or undesirable vegetation with appropriate plantings;

i. Repair damages caused by erosion, settling, or other geomorphological processes to all affected properties and structures, both on and off the property;

j. Redesign mitigation project (if necessary) and implement the new design; and

k. Correction procedures shall be approved by a qualified consultant and the Department.

Q. Buffer Areas.

1. The establishment of buffer areas may be required for development proposals and activities in or adjacent to critical areas. The purpose of the buffer shall be to protect the integrity, function, value, and resource of the subject critical area, and/or to protect life, property, and resources from risks associated with development on unstable or sensitive lands. Buffers shall consist of an undisturbed area of native vegetation established to achieve the purpose of the buffer. If the site has previously been disturbed, the buffer area shall be revegetated pursuant to an approved planting plan. Buffers shall be protected during construction by placement of a temporary barricade, on-site notice for construction crews of the presence of the critical area, and implementation of appropriate erosion and sedimentation controls.

2. Required buffer widths shall reflect the sensitivity of the particular critical area and resource or the risks associated with development and, in those circumstances permitted by these regulations, the type and intensity of human activity and site design proposed to be conducted on or near the critical area.

3. See individual critical areas regulations in RZC 21.64.020.B, 21.64.030.B, and 21.64.060.B for required buffer widths.

4. A residential lot approved in a subdivision that has designated streams or wetlands and their associated buffer in a Native Growth Protection Area established at plat approval shall be allowed to be improved honoring the wetland and stream buffers already established in the plat.

R. General Critical Area Protective Measures.

1. Critical Area Markers and Signs.

   a. The boundary at the outer edge of critical areas tracts and easement shall be delineated with permanent survey stakes, using iron or concrete markers as established by local survey standards.

   b. The boundary at the outer edge shall be identified with temporary signs prior to any site disturbance. The temporary signs shall be replaced with permanent signs prior to occupancy or use of the site. The number and spacing of permanent signs shall be designated by the Planning Department.

2. Critical Area Fencing. In order to inform subsequent purchasers of real property of the location of the critical area buffer boundaries and to discourage encroachment into that buffer, the developer of the property shall install split rail fencing or a similar fencing approved by the Department along the boundary of the critical area.

3. Notice on Title.

   a. In order to inform subsequent purchasers of real property of the existence of critical areas, the owner of any property containing a critical area or buffer on which a development proposal is submitted shall file a notice with the King County Department of Records and Elections. The notice shall state the presence of the critical area or buffer on the property, of the application of the Critical Areas Ordinance to the property, and the fact that limitations on actions in or affecting the critical area or buffer may exist. The notice shall run with the land.

   b. The applicant shall submit proof that the notice has been filed for public records before the City approves a building permit or, in the case of subdivision of land or binding site plans, at or before recording.

4. Critical Areas Tracts.

   a. Critical areas tracts, or other mechanisms as deemed appropriate by the Department, shall be used to delineate and protect contiguous critical areas and buffers. Areas in critical areas tracts can be included in determining gross site density, floor area ratios, and other area and dimensional regulations for five or fewer lots. Critical area tracts may not be used through the preliminary plat process to credit lot area and dimensional regulations for proposed residential lots.

b. Critical areas tracts shall be recorded on all documents of title or record for all affected lots.

c. Critical areas tracts shall be designated on the face of the plat or recording drawing in a format provided by the City Attorney.

d. The City may require that any required critical areas tract be held in an undivided interest by each owner of a building lot within the development, with the ownership interest passing with the ownership of the lot, or held by an incorporated homeowners' association, or other legal entity which assures the ownership, maintenance, and protection of the tract.

S. Critical Areas Reasonable Economic Use Exception - Private Property. These standards and regulations are not intended, and shall not be construed or applied in a manner, to deny all reasonable economic use of private property. Any private property owner who claims that strict application of these standards would deny all reasonable economic use of their property may apply for an exception under RZC 21.76.070.U.3, Decision Criteria - Critical Areas Reasonable Economic Use (Private).

T. Critical Areas Reasonable Use Exception - Public Project.

1. Any public agency or City department claiming that strict application of these standards would deny construction of a public project may apply for a Critical Areas Reasonable Use Exception - Public Project under RZC 21.76.070.U.4, Decision Criteria - Critical Areas Reasonable Use (Public Project).

(Ord. 2661; Ord. 2803; Ord. 2957; Ord. 2968)

Effective on: 4/27/2019

21.64.020 Fish and Wildlife Habitat Conservation Areas.

A. Classification and Rating of Fish and Wildlife Habitat Conservation Areas.

1. The Growth Management Act identifies fish and wildlife habitat conservation areas. These areas include:

a. Areas with which species of concern have a primary association.

i. Federally designated endangered and threatened species are those fish and wildlife species identified by the U.S. Fish and Wildlife Service and the National Marine Fisheries Service that are in danger of extinction or threatened to become endangered. The U.S. Fish and Wildlife Service and

the National Marine Fisheries Service should be consulted as necessary for current listing status.

ii. State-designated endangered, threatened, and sensitive species are those fish and wildlife species native to the State of Washington, identified by the Washington State Department of Fish and Wildlife, that are in danger of extinction, threatened to become endangered, vulnerable, or declining and are likely to become endangered or threatened in a significant portion of their range within the state without cooperative management or removal of threats. State-designated endangered, threatened, and sensitive species are periodically recorded in WAC 232-12-014 (state endangered species), and WAC 232-12-011 (state threatened and sensitive species). The Washington State Department of Fish and Wildlife maintains the most current listing and should be consulted as necessary for current listing status. Also included are state candidate species which include fish and wildlife species that the Washington Department of Fish and Wildlife will review for possible listing as endangered, threatened, or sensitive.

b. State Priority Habitats and Areas Associated with State Priority Species. Priority habitats and species are considered to be priorities for conservation and management. Priority species require protective measures for their perpetuation due to their population status, sensitivity to habitat alteration, and/or recreational, commercial, or tribal importance. Priority habitats are those habitat types or elements with unique or significant value to a diverse assemblage of species. A priority habitat may consist of a unique vegetation type or dominant plant species, a described successional stage, or a specific structural element. Priority habitats and species are identified by the Washington State Department of Fish and Wildlife.

c. Habitats and Species of Local Importance. Habitats and species of local importance are those identified by the City of Redmond, including those that possess unusual or unique habitat warranting protection because of qualitative species diversity or habitat system health indicators. The City Council shall formally designate habitats and species of local importance, if any, through the Zoning Code amendment process.

d. Naturally Occurring Ponds Under 20 Acres. Naturally occurring ponds are those ponds under 20 acres and their submerged aquatic beds that provide fish or wildlife habitat, including those artificial ponds intentionally created from dry areas in order to mitigate impacts to ponds. Naturally occurring ponds do not include ponds deliberately designed and created from dry sites, such as canals, detention facilities, wastewater treatment facilities, farm ponds,

temporary construction ponds, and landscape amenities, unless such artificial ponds were intentionally created for mitigation.

e. Waters of the State. Waters of the state include lakes, rivers, ponds, streams, inland waters, underground waters, and other surface waters and watercourses within the jurisdiction of the State of Washington, as classified in WAC 222-16-031.

f. Lakes, ponds, streams, and rivers planted with game fish by a governmental or tribal entity.

g. Land essential for preserving connections between habitat blocks and open spaces.

2. To promote consistent application of the standards and requirements of this chapter, fish and wildlife habitat conservation areas within the City of Redmond shall be rated or classified according to their characteristics, function and value, and/or their sensitivity to disturbance.

a. Core Preservation Areas. Core preservation areas include those areas of the City which are already protected through other regulatory mechanisms. They include Native Growth Protection Areas, Class I streams and their buffers, and Class II through IV streams, and other areas similarly protected. They may also include lands where development rights have been sold and some lands with recorded open space easements, depending on the purpose of the easement. The core preservation area includes wetlands and streams and their associated buffers as they become identified at a site-specific level.

b. Species Protection. Species of concern, priority species, and species of local importance shall be protected through management recommendations. “Species of concern” includes those species listed as state endangered, threatened, sensitive, or candidate, as well as those species listed or proposed for listing by the federal government. Priority species are those species considered to be priorities for conservation and management and are identified in the Washington Department of Fish and Wildlife Priority Habitat and Species (PHS) List. In Redmond, “species of local importance” refers to the Great Blue Heron.

c. Quality Habitat Areas. As sites are assessed for development, the Department shall evaluate each site for the presence of quality habitat using the following methodology. Sites will be qualitatively scored based upon several parameters indicative of habitat qualities. These parameters include size, community diversity, interspersion (spatial patterns), continuity, forest vegetation layers, forest age, and invasive plants. This assessment will allow the City to identify remaining quality habitat in the City; to protect remaining

quality habitat by imposition of the performance standards outlined in RZC 21.64.020.G, Fish and Wildlife Habitat Conservation Area Performance Standards, so long as there is no significant adverse economic impact to the developer; and to provide incentives to preserve such quality habitat.

d. Riparian Stream Corridors. Riparian stream corridors include Class I through IV streams and adjacent riparian habitat areas (stream buffers). Streams shall be designated Class I, Class II, Class III, and Class IV according to the criteria in this subsection. When more than one classification is present in short, alternating segments on the property in question, it will be classified according to the stream class which is more restrictive.

i. "Class I" streams are those streams identified as "Shorelines of the State" under the City of Redmond Shoreline Master Program.

ii. "Class II" streams are those natural streams that are not Class I and are either perennial or intermittent and have salmonid fish use or the potential for salmonid fish use.

iii. "Class III" streams are those natural streams that are not Class I or Class II and are either perennial or intermittent and have one of the following characteristics:

A. Non-salmonid fish use or the potential for non-salmonid fish use; or

B. Headwater streams with a surface water connection to salmon-bearing or potentially salmon-bearing streams (Class I or II).

iv. "Class IV" streams are those natural streams that are not Class I, Class II, or Class III. They are either perennial or intermittent, do not have fish or the potential for fish, and are non-headwater streams.

v. Intentionally Created Streams. These are manmade streams defined as such in these regulations and do not include streams created as mitigation. Purposeful creation must be demonstrated to the Committee through documentation, photographs, statements, and/or other evidence. Intentionally created streams may include irrigation and drainage ditches, grass-lined swales, or other artificial watercourses unless they are used by salmonid fish or created for the purpose of stream mitigation.

e. Classification of fish and wildlife habitat conservation areas shall be determined by the Department based on consideration of the following factors:

i. Maps adopted pursuant to this chapter, including the fish and wildlife habitat conservation area core preservation areas map, Critical Area Wildlife Habitat Willows/Rose Hill Neighborhood Map, and stream classification map. These maps shall be used as a general guide only for the assistance of property owners and other interested parties; boundaries are generalized. The actual type, extent, and boundaries of fish and wildlife habitat conservation areas and streams shall be determined in the field by a qualified consultant according to the procedures, definitions, and criteria established by this chapter. In the event of any conflict between the critical area location and designation shown on the City's map and the criteria or standards of this section, the criteria and standards shall prevail;

ii. Department of Fish and Wildlife priority habitat and species maps;

iii. Anadromous and resident salmonid distribution maps contained in the habitat-limiting factors reports published by the Washington State Conservation Commission;

iv. Federal and state information and maps related to species of concern;

v. Application of the criteria contained in these regulations; and

vi. Consideration of the technical reports submitted by qualified consultants in connection with the applications subject to these regulations.

B. Stream Buffers.

1. Stream buffers shall be sufficiently wide to achieve the full range of riparian and aquatic ecosystem functions, which include but are not limited to protection of instream fish habitat through control of temperature and sedimentation in streams, preservation of fish and wildlife habitat, and connection of riparian wildlife habitat to other habitats.

2. Stream buffers shall be measured perpendicular from the ordinary high water mark.

3. The following stream buffers are established for streams:

Table 21.64.020
Stream Buffers

Riparian Stream Corridor Classification	Stream Buffer Width (feet)
Class I	

Sammamish River north of PSE powerline crossing	150-foot inner buffer + 50-foot outer buffer
Sammamish River south of PSE powerline crossing	150 feet
Bear Creek west of Avondale Road	150 feet
Bear Creek east of Avondale Road	150-foot inner buffer + 50-foot outer buffer
Evans Creek	150-foot inner buffer + 50-foot outer buffer
Class II	
Class II	100 feet + 50-foot outer buffer
Class III	
Class III	100 feet
Class IV	
Perennial	36 feet
Intermittent	25 feet

4. Increased Stream Buffer Widths. The recommended stream buffer widths may be increased as follows:

a. When the Department determines that the recommended width is insufficient to prevent habitat degradation and to protect the structure and functions of the habitat areas;

b. When the frequently flooded area exceeds the recommended stream buffer width, the stream buffer shall extend to the outer edge of the frequently flooded area;

c. When the stream buffer is within a landslide hazard area or its buffer, the stream buffer shall be the recommended distance, or the landslide hazard area buffer, whichever is greater. Similarly if the stream buffer is within an erosion hazard area, the stream buffer shall be the recommended distance or the extent of the erosion hazard area.

5. Reduced Stream Buffer Widths. Stream buffer widths must meet the required width as described in the table in subsection B.3 above in this section. This does not refer to stream buffer width averaging. See below provisions under which stream buffer width averaging is permitted.

6. Stream Buffer Width Averaging. The Administrator may allow the recommended stream buffer width to be reduced in accordance with best available science only if:

a. The width reductions will not reduce stream or habitat functions, including those of non-fish habitat;

b. The width reduction will not degrade the habitat, including habitat for salmonid fisheries;

c. The proposal will provide additional habitat protection;

d. The total area contained in the stream buffer area after averaging is no less than that which would be contained within the standard stream buffer area; and

e. The buffer width is not reduced to less than 25 percent of the standard stream buffer width or 25 feet, whichever is greater.

7. For Class II streams, buffer averaging may be applied to the inner buffer. The following provisions apply to the inner buffer:

a. The width of the inner buffer shall not be reduced below 75 percent of the required inner buffer width at any point;

b. Encroachment shall not occur into the buffer of an associated wetland;

c. The area of the inner buffer after averaging shall be equivalent to the area of the inner buffer prior to averaging;

d. There is a net improvement in overall buffer ecological functions; and

e. Averaging shall not preclude the opportunity for future recovery of structure and function.

8. For Class I and II streams, maximum clearing and grading within the outer 50-foot buffer is 35 percent of the outer buffer area. Nothing in this provision shall be construed to require remediation of existing situations where the current clearing and grading is in excess of 35 percent. No net effective impervious surface may be created within this area.

9. No structures or improvements shall be permitted within the stream buffer, including buildings, decks, and docks, except as otherwise permitted or required under the City's adopted Shoreline Master Program, or under one of the following circumstances:

a. When the improvements are part of an approved rehabilitation or mitigation plan; or

b. For construction of new road crossings and utilities, and accessory structures, when no feasible alternative location exists; or

c. Trails, according to the following criteria:

i. Constructed of permeable materials;

ii. Designed to minimize impact on the stream system;

iii. Of a maximum trail corridor width of six feet; and

iv. Located within the outer half of the buffer; i.e., the portion of the buffer that is farther away from the stream; See also RZC 21.68.180, Shoreline Access, for trail construction in shorelines of the state;

d. Footbridges; or

e. Minor educational facilities, such as informational signs; or

f. Stormwater conveyance systems, provided that they are designed to maintain the buffers' functions and values; or

g. When improvements are part of an approved plan consistent with the no net effective impervious surface provisions of (8) above.

10. Businesses currently located in the stream buffers may continue to operate. A nonconforming use may be expanded provided the expansion does not create significant additional impacts to the stream buffers. Nonconforming structures may be maintained and repaired, and may be enlarged or expanded provided said enlargement does not extend the structure closer to the riparian stream corridor.

11. Where an approved City capital improvement project moves the ordinary high water mark of a stream from its pre-project location, the buffer width for adjacent properties shall continue to be measured from the pre-capital improvement project ordinary high water mark.

12. Nothing in this section shall be construed to require the removal of existing structures within stream buffers.

C. Alteration of Fish and Wildlife Habitat Conservation Areas - Generally. Alteration of fish and wildlife habitat conservation areas may only be permitted subject to the criteria in RZC 21.64.020.E, RZC 21.64.020.F, RZC 21.64.020.C, RZC 21.64.040.C, RZC 21.64.050.C, and RZC 21.64.020.D.

D. Alteration of Riparian Stream Corridors.

1. Relocation of a Class I, II, or III riparian stream corridor in order to facilitate general site design will not be allowed. Relocation of these riparian stream corridors may take place only when it is part of an approved mitigation or rehabilitation plan, will result in equal or better habitat and water quality, and will not diminish the flow capacity of the stream.

2. Bridges shall be used to cross Class I streams.

3. Culverts are allowable only under the following circumstances:

a. Only in Class II, III, and IV streams;

b. When fish passage will not be impaired;

c. When the design criteria of the Washington State Department of Fish and Wildlife, Design of Road Culverts for Fish Passage, 2003, are met; and

d. The applicant or successors shall, at all times, keep any culvert free of debris and sediment to allow free passage of water and, if applicable, fish.

4. Stream-bank stabilization to protect new structures from future channel migration is not permitted except when such stabilization is achieved through bioengineering or soft armoring techniques in accordance with an approved critical areas report.

5. Construction of roads and minor road bridging may be permitted in accordance with an approved critical areas report subject to the following:

a. There is no other feasible alternative route with less impact on the environment;

b. The crossing minimizes interruption of downstream movement of wood and gravel;

c. Roads in riparian habitat areas shall not run parallel to the water body;

d. Crossings, where necessary, shall only occur as near to perpendicular with the water body as possible;

e. Mitigation for impacts is provided pursuant to an approved mitigation plan; and

f. Road bridges are designed according to the Department of Fish and Wildlife Design of Culverts for Fish Passage, 2003, and the National Marine Fisheries Service Guidelines for Salmonid Passage at Stream Crossings, 2000.

6. The City may require that a stream be removed from a culvert as a condition of approval, unless the culvert is not detrimental to fish habitat or water quality, or removal would be detrimental to fish or wildlife habitat or to water quality.

E. Alteration of Fish and Wildlife Habitat Conservation Areas.

1. Alterations that create adverse impacts to core preservation areas shall be avoided, subject to Section 21.64.010.S, Critical Areas Reasonable Economic Use Exception - Private Property, and Section 21.64.010.T, Critical Areas Reasonable Use Exception - Public Project.

2. Species Protection. Species management recommendations for development impacting species of concern, priority species, and species of local importance shall be implemented. Management recommendations are based on the following factors: species recommendations of the Washington State Department of Fish and Wildlife; recommendations contained in the wildlife study submitted by a qualified consultant; and the nature and intensity of land uses and activities occurring on the site and on adjacent sites.

3. Alteration of Quality Habitat Areas. RZC 21.64.020.G, Fish and Wildlife Habitat Conservation Area Performance Standards, shall apply to quality habitat areas unless application of such standards would result in a significant adverse economic impact on the owner or developer.

F. Riparian Stream Corridor Performance Standards. The following standards apply to riparian stream corridor restoration and enhancement:

1. Use plants indigenous to the region (not introduced or foreign species);

2. Use plants adaptable to a broad range of water depths;

3. Plants should be commercially available or available from local sources;

4. Plant species high in food and cover value for fish and wildlife must be used;

5. Plant mostly perennial species;

6. Avoid committing significant areas of the site to species that have questionable potential for successful establishment;

7. Plant selection must be approved by a qualified consultant;

8. Substrate should consist of a minimum of one foot, in depth, of clean (uncontaminated with chemicals or solid/hazardous wastes) inorganic/organic materials;

9. Planting densities and placement of plants should be determined by a qualified consultant and shown on the design plans;

10. The planting plan must be approved by the Department;

11. Confine stockpiling to upland areas and ensure contract specifications should limit stockpiling of earthen materials to durations in accordance with City clearing and grading standards, unless otherwise approved by the Committee;

12. Planting instructions shall be submitted which describe proper placement, diversity, and spacing of seeds, tubers, bulbs, rhizomes, sprigs, plugs, and transplanted stock;

13. Apply controlled-release nonphosphorus fertilizer at the time of planting and afterward only as plant conditions warrant (determined during the monitoring process);

14. Install an irrigation system, if necessary, for the initial establishment period;

15. Construction specifications and methods must be approved by a qualified consultant and the Department;

16. Construction management should occur by a qualified consultant and be inspected by the City; and

17. Limit the use of pesticides near streams.

G. Fish and Wildlife Habitat Conservation Area Performance Standards. The following standards shall apply to all sites where a species protected under this chapter has been identified. These standards shall also apply to sites where quality habitat has been identified unless application of any of these standards would result in a significant adverse economic impact on the owner or developer.

1. Relevant performance standards from RZC 21.64.020.F, Riparian Stream Corridor Performance Standards, and RZC 21.64.030.D, Wetlands Performance/Design Standards, as determined by the Department, shall be incorporated into mitigation plans.

2. The following additional mitigation measures shall be reflected in mitigation planning:

a. Consider habitat in site planning and design;

b. Locate buildings and structures in a manner that preserves and minimizes adverse impacts to important habitat areas;

c. Integrate retained habitat into open space and landscaping, consistent with the provisions of RZC 21.32, Landscaping;

d. Where possible, consolidate habitat and vegetated open space in contiguous blocks;

e. Locate habitat contiguous to other habitat, open space, or landscaped areas to contribute to a continuous system or corridor that provides connections to adjacent habitat areas;

f. Use native species in any landscaping of disturbed or undeveloped areas and in any enhancement of habitat or buffers;

g. Emphasize heterogeneity and structural diversity of vegetation in landscaping;

h. Remove and/or control any noxious weeds or animals as defined by the City; and

i. Preserve significant trees, preferably in groups, consistent with RZC 21.72, Tree Preservation, and with achieving the objectives of these standards.

3. Landscape plan shall be submitted consistent with the requirements of RZC 21.32.040, Landscape Area Requirements, and with the goals and standards of this chapter. The plan shall reflect the report prepared pursuant to RZC 21.64.010.G, Permit Process and Application Requirements.

(Ord. 2968)

Effective on: 4/16/2011

21.64.030 Wetlands.

A. Classification and Rating of Wetlands. To promote consistent application of the standards and requirements of this chapter, wetlands within the City of Redmond shall be classified according to their characteristics, function and value, and/or their

sensitivity to disturbance. Wetlands shall be rated and regulated according to the categories defined by the Washington State Department of Ecology Wetland Rating System for Western Washington (Ecology Publication No. 14-06-029) as revised. This document contains the methods for determining the wetland category.

1. Wetland Classification. Wetlands, as defined by this chapter, shall be designated Category I, Category II, Category III, and Category IV.

a. Category I wetlands are those wetlands that represent a unique or rare wetland type, are more sensitive to disturbance than most wetlands, are relatively undisturbed, and contain ecological attributes that are impossible to replace within a human lifetime, or provide a high level of functions. All wetlands with one or more of the following criteria shall be considered a Category I wetland:

i. Wetlands that are identified by scientists of the Washington Natural Heritage Program/DNE as high-quality, relatively undisturbed wetlands, or wetlands that support state-listed threatened or endangered plants; or

ii. Bogs; or

iii. Mature and old-growth forested wetlands over one acre in size; or

iv. Wetlands that provide a very high level of functions as evidenced by a score of 23 points or more on the Western Washington Rating System form.

b. Category II wetlands are those wetlands that provide high levels of some functions which are difficult to replace. Category II wetlands meet the following criteria:

i. Wetlands scoring between 20 to 22 points on the Western Washington Rating System form; or

ii. Wetlands that do not meet the criteria of Category I.

c. Category III wetlands are those wetlands that provide a moderate level of functions. They are typically more disturbed and have less diversity or are more isolated from other natural resources in the landscape. Category III wetlands meet the following criteria:

i. Wetlands scoring between 16 to 19 points on the Western Washington Rating System form; or

ii. Wetlands that do not meet the criteria of Category I.

d. Category IV wetlands are those wetlands that provide the lowest level of function. These wetlands score less than 16 points on the Western Washington Rating System form.

2. Classification of wetlands shall be determined by the Committee based on consideration of the following factors:

a. Maps adopted pursuant to this chapter, including the wetland map, which identifies the approximate location and extent of wetlands. This map shall be used as a general guide only for the assistance of property owners and other interested parties; boundaries are generalized. The actual type, extent, and boundaries of wetlands shall be determined in the field by a qualified consultant according to the procedures, definition, and criteria established by this chapter. In the event of any conflict between the critical area location and designation shown on the City's map and the criteria or standards of this section, the criteria and standards shall prevail;

b. National Wetlands Inventory Maps prepared by the U.S. Fish and Wildlife Service;

c. Application of the criteria contained in these regulations; and

d. Consideration of the technical reports submitted by qualified consultants in connection with applications subject to these regulations.

3. Identification and Delineation. Identification of wetlands and delineation of their boundaries pursuant to this Chapter shall be done in accordance with the approved federal wetland delineation manual and applicable regional supplement. All areas within the City meeting the wetland designation criteria in that procedure are hereby designated critical areas and are subject to the provisions of this chapter. Wetland delineations are valid for five years; after such date the City shall determine whether a revision or additional assessment is necessary.

B. Wetland Buffers.

1. Required buffer widths shall reflect the sensitivity of the particular wetland or the risks associated with development and, in those circumstances permitted by these regulations, the type and intensity of human activity and site design proposed to be conducted on or near the critical area.

2. Wetland buffers shall be measured perpendicular from the wetland edge as delineated and marked in the field. Wetland buffers shall be established as follows:

Table 21.64.030A.1 Wetland Buffer Requirements			
Buffer Width Based on Habitat Score (feet)			
Wetland Category	3-5	6-7	8-9
Category I: Wetlands of High Conservation Value	250	250	300
Category I	100	150	300
Category II	100	150	300
Category III	80	150	300
Category IV	50	50	50

Table 21.64.030A.2 Wetland Buffer Requirements When Table 21.64.030A.3 is Implemented			
Buffer Width Based on Habitat Score (feet)			
Wetland Category	3-5	6-7	8-9
Category I: Wetlands of High Conservation Value	190	190	225
Category I	75	110	225
Category II	75	110	225
Category III	60	110	225
40	50	40	40

Table 21.64.030A.3 Requirement Measures to Minimize Impacts to Wetlands (All Measures Required)	
Disturbance	• Required Measure to Minimize Impacts
Lights	• Direct lights away from wetland
Noise	• Locate activity that generates noise away from wetland • If warranted, enhance existing buffer with native vegetation plantings adjacent to noise source • For activities that generate relatively continuous, potentially disruptive noise, such as certain heavy industry, establish an additional 10' heavily vegetated buffer strip immediately adjacent to the outer wetland buffer
Toxic Runoff	• Route all new, untreated runoff away from wetland while ensuring wetland is not dewatered • Establish covenants limiting use of pesticides within 150 feet of wetland • Apply integrated pest management
Stormwater Runoff	• Retrofit stormwater detention and treatment for roads and existing adjacent developments • Prevent channelized flow from lawns that directly enters the buffer • Use Low Impact Development techniques
Changes in Water Regime	• Infiltrate or treat, detain, and disperse into buffer new runoff from impervious surfaces and new lawns
Pets and Human Disturbance	• Use fencing or plant dense vegetation to delineate buffers edge and to discourage disturbance using vegetation appropriate for the ecoregion • Place wetland and its buffer in a separate tract

Dust	• Use best management practices to control dust

Elements in Table 21.64.030A.3 shall be fully documented by a qualified wetland professional.

3. The buffer for a wetland created, restored, or enhanced as compensation for approved wetland alterations shall be that required for the category of the wetland.

4. Increased Buffer Widths. The Department may extend the width of the buffer in accordance with the recommendations of a qualified wetland professional and the best available science on a case-by-case basis when a larger buffer is necessary to protect wetland functions and values based on site-specific characteristics. The determination shall be supported by appropriate documentation showing that it is reasonably related to protection of the functions and values fo the wetland. The documentation must include the following criteria:

a. The wetland is used by a state or federally listed plant or animal species or has essential or outstanding habitat for those species, or has unusual nesting or resting sites such as heron rookeries or raptor nesting trees; or

b. The adjacent land is susceptible to severe erosion, and erosion-control measure will not effectively prevent adverse wetland impacts; or

c. The adjacent land has minimal vegetation cover or slopes greater than 30 percent.

5. Wetland Buffer Width Averaging. Wetland buffer widths may be modified by averaging buffer widths to improve wetland protection as set forth herein. The Department may allow modification of the standard wetland buffer width in accordance with the best available science on a case-by-case basis by averaging buffer widths. Averaging buffer widths may only be allowed when all of the following conditions are met as demonstrated by a qualified wetland professional:

a. It will not reduce the functions or values;

b. The wetland contains variations in sensitivity due to existing physical characteristics or the character of the buffer varies in slope, soils, or vegetation, and the wetland would benefit from increased buffers adjacent to the higher functioning area of habitat or more sensistive portion of the wetland and would not be adversely impacted by a decreased buffer adjacent to the lower-functioning or less-sensitive portion of the wetland;

c. The total area contained in the buffer area after averaging is equal to the area required in the standard buffer;

d. The buffer width is not reduced more than 25 percent of the width or 75 feet for Category I and II wetlands. 50 feet for Category III wetlands, and 25 feet for Category IV wetlands, whichever is greater and;

e. The wetland has significant differences in characteristics that affect its habitat functions, such as a wetland with a forested component adjacent to a degraded emergent component.

6. Stormwater management facilities, such as biofiltration swales and outfalls, may be located within the outer 25 percent of the buffer, provided that no other location is feasible and the location of such facilities will not degrade the functions or values of the wetland. Stormwater ponds must be located outside of the required buffer. Underground vaults are also permitted within the outer 25 percent of the buffer provided that the maintenance access area lies outside of the buffer and the area above the vault is planted with native vegetation.

C. Alteration of Wetlands.

1. Draining or disturbing a wetland is prohibited, except as provided for in this Chapter. Disturbances include changing the physical structure within a wetland, changing the amount and velocity of water, and changing the fluctuation of water levels.

2. Wetland alteration shall result in no net loss of wetland area, except where the following criteria are met:

a. The lost wetland area provides minimal functions and the mitigation action(s) results in a net gain in wetland functions as determined by a site-specific assessment; or

b. The lost wetland area provided minimal functions as determined by a site-specific functional assessment and other replacement habitats provide greater benefits to the functioning of the watershed, such as riparian habitat restoration and enhancement.

3. Category I Wetlands. Alterations of Category I wetlands shall be prohibited subject to the reasonable use provisions of this chapter.

4. Category II, III, and IV Wetlands.

a. Any proposed alteration and mitigation shall comply with the mitigation performance standards and requirements of these regulations; and

b. No net loss of wetland function and value may occur.

c. Where enhancement or replacement is proposed, ratios shall comply with the requirements of subsection C.7 below in this section.

5. Mitigation for alterations to wetlands shall achieve equivalent or greater biological functions. Mitigation plans shall be consistent with the Department of Ecology Guidance on Wetland Mitigation in Washington State, Part 2: Guidelines for Developing Freshwater Wetlands Mitigation Plans and Proposals, April, 2004, as revised.

6. Mitigation actions shall address functions affected by the alteration to achieve functional equivalency or improvement, and shall provide similar wetland functions as those lost except when:

a. The filled/impacted wetland provides minimal functions as determined by a site-specific function assessment; and the proposed mitigation action(s) will provide equal or greater functions, or will provide functions shown to be limiting within a watershed through a formal watershed assessment plan or protocol; or

b. Out-of-kind replacement will best meet formerly identified regional goals, such as replacement of historically diminished wetland types.

7. Mitigation actions that require compensation by replacing, enhancing, or substitution shall occur in the following order of preference:

a. Preserving high-quality wetlands that are under imminent threat.

b. Restoring wetlands on upland sites that were formerly wetlands.

c. Creating wetlands on disturbed upland sites, such as those with vegetative cover consisting primarily of exotic introduced species.

d. Enhancing significantly degraded wetlands.

8. Wetland Replacement Ratios.

a. Where wetland alterations are permitted by the City, the applicant shall restore or create areas of wetlands in order to compensate for wetland losses. Equivalent areas shall be determined according to acreage, function, type, location, timing factors, and projected success of restoration or creation.

b. When creating or enhancing wetlands, the following acreage replacement ratios shall be used:

Table 21.64.030B Acreage Replacement Ratios			
Category and Type of Wetland	**Creation or Reestablishment**	**Rehabilitation (Restoration)**	**Enhancement Only**
Category I Forested	6:1	12:1	24:1
Category I based on function	4:1	8:1	16:1
Category II	3:1	6:1	12:1
Category III	2:1	4:1	8:1
Category IIV	1.5:1	3:1	6:1

c. These ratios do not apply to the use of credits from a state certified wetland mitigation bank. When credits from a certified bank are used, replacement ratios shall be consistent with the requirements of the mitigation banking instrument.

d. Enhanced and created wetlands shall be appropriately classified and buffered.

D. Wetlands Performance/Design Standards.

1. Use plants indigenous to the Pacific Northwest region (not introduced or foreign species);

2. Use plants adaptable to a broad range of water depths;

3. Plants should be commercially available or available from local sources;

4. Plant species high in food and cover value for fish and wildlife must be used;

5. Avoid committing significant areas of the site to species that have questionable potential for successful establishment;

6. Plant selection must be approved by a qualified wetland specialist;

7. Water depth is not to exceed six and one-half feet (two meters);

8. The grade or slope that water flows through the wetland is not to exceed six percent for wetland creation sites;

9. Slopes within the wetland basin and the buffer zone may not be steeper than 3:1 (horizontal to vertical) for wetland creation sites;

10. Substrate should consist of a minimum of one foot, in depth, of clean (uncontaminated with chemicals or solid/hazardous wastes) inorganic/organic materials for wetland creation sites;

11. Planting densities and placement of plants should be determined by a qualified wetland professional and shown on the design plans;

12. The planting plan must be approved by the Department;

13. Confine stockpiling to upland areas and ensure contract specifications limit stockpiling of earthen materials to durations in accordance with City clearing and grading standards, unless otherwise approved by the Committee;

14. Planting instructions shall be submitted which describe proper placement, diversity, and spacing of seeds, tubers, bulbs, rhizomes, sprigs, plugs, and transplanted stock;

15. Apply controlled-release, non-phosphorus fertilizer at the time of planting and afterward only as plant conditions warrant (determined during the monitoring process);

16. Install an irrigation system, if necessary, for the initial establishment period;

17. Construction specifications and methods must be approved by a qualified consultant and the Department; and

18. Construction management should occur by a qualified consultant and be inspected by the City.

(Ord. 2803; Ord. 2968)

Effective on: 10/17/2015

21.64.040 Frequently Flooded Areas.

A. Classification and Rating of Frequently Flooded Areas. To promote consistent application of the standards and requirements of this chapter, frequently flooded

areas within the city of Redmond shall be rated or classified according to their characteristics, function and value, and/or their sensitivity to disturbance.

1. Frequently Flooded Areas Classifications. Frequently flooded areas shall be classified according to the criteria in this section.

a. Floodplain. The total area subject to inundation by the base flood (the flood that has a one percent chance of occurring in any given year).

b. Flood Fringe. The portion of the floodplain outside of the floodway which is generally covered by flood waters during the base flood and is generally associated with standing water rather than rapidly flowing water.

c. FEMA Floodway. The channel of the stream and that portion of the adjoining floodplain which is necessary to contain and discharge the FEMA base flood flow without increasing the FEMA base flood elevation more than one foot.

d. Zero-Rise Floodway. The channel of the stream and that portion of the adjoining floodplain which is necessary to contain and discharge the base flood flow without increasing the base flood elevation. The zero-rise floodway will always include the FEMA floodway.

2. Classification of frequently flooded areas shall be determined by the Committee based on consideration of the following factors:

a. Maps adopted pursuant to this chapter including the frequently flooded areas map, which identifies the approximate location and extent of the 100-year floodplain. This map shall be used as a general guide only for the assistance of property owners and other interested parties; boundaries are generalized. The actual type, extent, and boundaries of frequently flooded areas shall be determined in the field by a qualified consultant according to the procedures, definitions, and criteria established by this chapter. In the event of any conflict between the critical area location and designation shown on the City's map and the criteria or standards of this section, the criteria and standards shall prevail. The City will employ hydraulic models to define the extent of the zero-rise floodway. If the zero-rise floodway has not yet been defined for the property in question, the applicant will be responsible for modeling the base flood elevation and delineating the extent of the zero-rise floodway, consistent with the assumptions in the Bear Creek Basin Plan as adopted by the City. In the absence of a City hydraulic model, FEMA data will be acceptable;

b. Flood Insurance Rate Maps published by the Federal Emergency Management Agency;

c. Application of the criteria contained in these regulations; and

d. Consideration of the technical reports submitted by qualified consultants in connection with applications subject to these regulations.

B. Alteration of Frequently Flooded Areas. Alteration of frequently flooded areas may only be permitted subject to the criteria in RZC 21.64.020.D through RZC 21.64.020.E, RZC 21.64.030.C, RZC 21.64.040.C, RZC 21.64.050.B, and RZC 21.64.060.D.

C. Flood Hazard Areas – Development Standards.

1. Flood Hazard Areas Generally. For all new structures or substantial improvements, the applicant must provide certification by a qualified consultant of the actual as-built elevation of the lowest floor, including basement, and, if applicable, the actual as-built elevation to which the structure is flood-proofed. If the structure has a basement, this must be indicated.

2. The Flood Fringe Outside the Zero-Rise Floodway.

a. Development shall not reduce the effective base flood storage volume of the floodplain. Grading or other activity which would reduce the effective storage volume must be mitigated by creating compensatory storage on the site. Developments in Downtown in the Sammamish River floodplain have the option to participate in the city's Sammamish River Regional Compensatory Floodplain Storage Project. This option allows developers to compensate for on-site floodplain fill volume in this regional project by having their storage volume allocated to this project.

b. No structure shall be allowed which would be at risk due to stream bank destabilization, including that associated with channel relocation or meandering.

c. All elevated construction must be designed and certified by a professional structural engineer registered in the State of Washington and must be approved by the City prior to construction.

d. Subdivisions, short subdivisions, binding site plans, site plan review, special Land Use Permits, and general Land Use Permits shall follow the following requirements:

i. New building lots shall contain 3,600 square feet or more of buildable land outside the zero-rise floodway and building setback lines shall be shown on the face of the plat to restrict permanent structures to the area so defined;

ii. All utilities and facilities, such as sewer, gas, electrical, telephone, cable communications, and water systems, shall be located and constructed consistent with subsection C.2.i of this section;

iii. Base flood data and flood hazard notes shall be shown on the face of the recorded plat, including but not limited to the base flood elevation, required flood protection elevations, and the boundaries of the floodplain and the floodway, if determined; and

iv. The following note shall be recorded with the King County Department of Records and Elections for all affected lots:

NOTICE

Lots and structures located within flood hazard areas may be inaccessible by emergency vehicles during flood events.

Residents and property owners should take appropriate advance precautions.

e. New residential construction and substantial improvement shall meet the following criteria:

i. The lowest floor, including basements and below-grade crawl spaces per FEMA regulations, shall be elevated to the flood protection elevation.

ii. Portions of the building that are below the flood protection elevation shall not be fully enclosed. The areas below the lowest floor shall be designed to automatically equalize hydrodynamic flood forces on exterior walls by allowing the entry and exit of floodwaters. Designs for meeting this requirement must meet or exceed the following minimum criteria:

A. Minimum of two openings on opposite walls having a total open area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided;

B. The bottom of all openings shall be no higher than one foot above grade.

iii. Openings may be equipped with screens, louvers, or other coverings or devices, provided that they permit the unrestricted entry and exit of floodwaters.

f. New nonresidential construction and substantial improvement of any existing commercial, industrial, or other nonresidential structure shall meet the elevation requirements of residential construction.

g. All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure.

h. For all mobile and manufactured homes, all standards for flood hazard protection for conventional residential construction shall apply. All manufactured and mobile homes must be anchored and shall be installed using methods and practices that minimize flood damage. All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system.

i. Utilities shall meet the following criteria:

i. All new and replacement utilities, including sewage treatment facilities, shall be flood-proofed to, or elevated above, the flood protection elevation.

ii. New on-site sewage disposal systems shall be located outside the limits of the 100-year floodplain. The installation of new on-site sewage disposal systems in the floodplain is prohibited.

iii. Sewage and agricultural waste storage facilities shall be flood-proofed to the base flood elevation plus three feet.

iv. Aboveground utility transmission lines, other than electrical transmission lines, shall only be allowed for the transport of nonhazardous substances.

v. Buried utility transmission lines transporting hazardous substances (as defined by the Washington State Hazardous Waste Management Act in RCW 70.105.005) shall be buried at a minimum depth of four feet below the maximum depth of scour for the base flood predicted by a professional civil engineer licensed by the State of Washington and shall achieve sufficient negative buoyancy so that any potential for flotation or upward migration is eliminated.

j. Critical facilities may be allowed within the flood fringe of the floodplain. All such proposed uses shall be evaluated as part of the underlying land use permit. Critical facilities constructed within the flood fringe shall have the lowest floor elevated to three or more feet above the base flood elevation. Flood-proofing and sealing measures must be taken to ensure that hazardous or toxic substances will not be displaced by or released into floodwaters. Access routes elevated to the flood protection elevation shall be provided to

all critical facilities to the nearest maintained public street or roadway located outside of the floodplain.

k. The Committee shall review all Land Use Permits to determine that all necessary permits have been obtained as required by federal or state law, including Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334, as required by Section 60.3(a)(2) of 44 CFR.

l. Storage and containment of hazardous or dangerous chemicals, substances or materials, as those terms are determined by applicable state and federal regulations, shall be prohibited, provided that existing uses involving storage, etc., shall conform to the flood protection elevation when applying for any permit.

3. Development in the Zero-Rise Floodway.

a. Activities allowed within the zero-rise floodway must conform to the requirements of this section, as well as the requirements that apply to the flood fringe outside the zero-rise floodway as identified in subsection C.2 of this section.

b. No development activity shall reduce the effective storage volume of the floodplain.

c. No development, including permitted new construction or reconstruction, shall cause any increase in the zero-rise base flood elevation.

d. No temporary structures or storage of materials hazardous to public health, safety, and welfare shall be permitted in the zero-rise floodway.

e. Construction of new residential or nonresidential structures is permitted in the zero-rise floodway only in the following circumstances:

i. The structure must be on a lot legally in existence at the time the ordinance codified in this chapter becomes effective;

ii. The structure must be on a lot that contains less than 3,600 square feet of buildable land outside the zero-rise floodway; and

iii. The structure must meet the construction standards set forth in subsections C.2 and C.3.b, C.3.c, and C.3.d of this section.

f. New lots that include part of the zero-rise floodway may be created only if the lots meet the requirements of subsection C.2.d of this section and administrative rules, or are declared as nonbuilding lots on the face of the plat.

g. The following circumstances are presumed to produce no increase in base flood elevation and shall not require special studies to establish this fact:

i. Substantial improvement on existing residential structures outside the zero-rise floodway where the building footprint is not increased.

ii. Substantial improvement of an existing residential structure shall meet the requirements for new residential construction set forth in subsection C.2.e of this section.

h. Reconstruction of an existing residential structure shall meet the requirements for new residential construction set forth in subsection C.2.e of this section

i. Utilities and roads are permitted in the zero-rise floodway only when no other location is practicable, or when mitigating measures achieve zero-rise floodway elevations, and shall meet the minimum criteria set forth in subsection C.2.i of this section and the following requirements:

i. Construction of sewage treatment facilities shall be prohibited.

ii. Utility transmission lines transporting hazardous substances shall be buried at a minimum depth of four feet below the maximum depth of scour for the base flood as predicted by a professional civil engineer licensed by the State of Washington, and shall achieve sufficient negative buoyancy so that any potential for flotation or upward migration is eliminated.

j. Critical facilities shall not be constructed in the zero-rise floodway.

k. Floodway Dependent Structures. Installations or structures that are floodway dependent may be located in the floodway, provided that the development proposal receives approval from all other agencies with jurisdiction and meets all standards in RZC 21.64.020.D, Alteration of Riparian Stream Corridors, and 21.64.030.C, Alteration of Wetlands. Such installations include but are not limited to:

i. Dams or diversions for water supply, flood control, hydroelectric production, irrigation, or fisheries enhancement;

ii. Flood damage reduction facilities, such as levees and pumping stations;

iii. Stream bank stabilization structures where no feasible alternative exists to protecting public or private property;

iv. Stormwater conveyance facilities subject to the requirements of the development standards for streams and wetlands, and other relevant City of Redmond development standards;

v. Boat launches, docks, and related recreation structures;

vi. Bridge piers and abutments; and

vii. Fisheries enhancement or stream restoration projects.

l. Development of the area located downstream of Redmond Way on Bear Creek may be allowed:

i. when mitigating measures achieve zero-rise floodway elevations, or

ii. when surface water elevations are not increased over one foot provided no significant unmitigated upstream, downstream, or on-site environmental impacts are created.

4. Development in the FEMA Floodway.

a. Construction or placement of new residential or nonresidential structures is prohibited within the FEMA floodway. Shoreline protective structures, bridges, roads, trails, and railroads are permitted within the FEMA floodway.

b. No development subject to these regulations, including permitted new construction or reconstruction, shall cause any increase in the FEMA base flood elevation.

c. Substantial improvement of an existing residential structure located in the floodway must meet the requirements set out in WAC 173-158-070 as amended. Such substantial improvement is presumed to produce no increase in base flood elevation and shall not require special studies to establish this fact.

(Ord. 2663; Ord. 2958)

Effective on: 4/27/2019

21.64.050 Critical Aquifer Recharge Areas.

A. Classification and Rating of Critical Aquifer Recharge Areas. To promote consistent application of the standards and requirements of this chapter, Critical Aquifer Recharge Areas within the City of Redmond shall be rated or classified

according to their characteristics, function and value, and/or their sensitivity to disturbance.

1. Critical Aquifer Recharge Areas Classification. Critical aquifer recharge areas are those areas with a critical recharging effect on aquifers used for potable water. Wellhead protection involves the management of activities that have a potential to degrade the quality of groundwater produced by a supply well. The City of Redmond is classified into two aquifer recharge areas that are based on proximity to and travel time of groundwater to the City's public water source wells, and are as follows:

a. Critical Aquifer Recharge Area I is the land area overlying the aquifer in which it will take a maximum of five years for the groundwater to reach any public water source well owned by the City.

b. Critical Aquifer Recharge Area II is the land area overlying the aquifer in which it will take over five years to reach any public water source well owned by the City.

2. Classification of Critical Aquifer Recharge Areas shall be determined in accordance with the City's adopted Critical Aquifer Recharge Areas Map.

3. Relationship of Critical Aquifer Recharge Areas to Wellhead Protection Zones (WAC 246-290). The City of Redmond Water System Plan and Washington State Department of Health require public water supply wells have wellhead protection zones delineated based on the time of travel of groundwater to a public drinking water supply well. The relationship between the Wellhead Protection Zones and the Critical Aquifer Recharge Areas are as follows:

Table 21.64.050A

Wellhead Protection Zone	Wellhead Protection Zone Time of Travel	Critical Aquifer Recharge Areas
Sanitary Control Area	150 foot radius, no horizontal time travel	Critical Aquifer Recharge Area 1
Wellhead Protection Zone 1	6-month and 1-year horizontal time of travel	
Wellhead Protection Zone 2	5-year horizontal time of travel	

Wellhead Protection Zone 3	10-year horizontal time of travel	Critical Aquifer Recharge Area II
Wellhead Protection Zone 4	Area outside of the 10-year time of travel that has a critical recharging effect on the aquifer.	Critical Aquifer Recharge Area II (includes all other lands providing critical recharging effect on the aquifer)

B. Alteration of Critical Aquifer Recharge Areas. Alteration of critical aquifer recharge areas may only be permitted subject to the criteria in RZC 21.64.020.D, RZC 21.64.020.E, RZC 21.64.030.C, RZC 21.64.040.B, RZC 21.64.050.B, and RZC 21.64.060.D.

C. Prohibited Land Uses and Activities in Critical Aquifer Recharge Areas I and II.

1. Land uses or activities that pose a hazard to the City's groundwater resources, resulting from storing, handling, treating, using, producing, recycling, or disposing of hazardous materials or other deleterious substances, shall be prohibited in Critical Aquifer Recharge Area I. Legal preexisting uses may continue to operate. These land uses and activities include:

a. Large on-site sewage systems, as defined in WAC Chapter 246-272A;

b. Hazardous liquid pipelines as defined in RCW Chapter 81.88 and RZC 21.78;

c. Solid waste landfills;

d. Solid waste transfer stations;

e. Liquid petroleum refining, reprocessing, and storage;

f. Bulk storage facilities as defined in RZC 21.78, Definitions;

g. Hazardous waste treatment, storage, and disposal facilities except those defined under permit by rule for industrial wastewater treatment processes per WAC 173-303-802(5)(c);

h. Chemical manufacturing, including but not limited to organic and inorganic chemicals, plastics and resins, pharmaceuticals, cleaning compounds, paints and lacquers, and agricultural chemicals;

i. Dry cleaning establishments using the solvent perchloroethylene;

j. Primary and secondary metal industries that manufacture, produce, smelt, or refine ferrous and nonferrous metals from molten materials;

k. Wood preserving and wood products preserving;

l. Mobile fleet fueling operations;

m. Class I, Class III, Class IV, and the following types of Class V wells: 5A7, 5F1, 5D3, 5D4, 5W9, 5W10, 5W11, 5W31, 5X13, 5X14, 5X15, 5W20, 5X28, and 5N24 as regulated under RCW Chapter 90.48 and WAC Chapters 173-200 and 173-218, as amended;

n. Permanent dewatering of the aquifer;

o. Irrigation with graywater;

p. Reclaimed or recycled water use with the exception of uses that discharge to the sanitary sewer;

q. Sand, gravel, and hard rock mining;

r. Mining of any type below the upper surface of the saturated groundwater;

s. Disposal of radioactive wastes, as defined in chapter 43.200 RCW;

t. Hydrocarbon extraction;

u. Golf courses;

v. Cemeteries;

w. Vehicle wrecking yards;

x. Vehicle towing yards that store vehicles on permeable surfaces; and

y. Metal recycling facilities with outdoor storage and handling activities.

2. The following are prohibited in Critical Aquifer Recharge Area II. Legal preexisting uses may continue to operate:

a. Permanent dewatering; and

b. Reclaimed or recycled water use with the exception of uses that discharge to the sanitary sewer.

3. Other land uses and activities that the City determines would pose a significant groundwater hazard to the City's groundwater supply.

D. Critical Aquifer Recharge Areas Performance Standards. . Development or redevelopment in the Critical Aquifer Recharge Areas shall implement the following performance standards:

1. Any uses or activities locating in Critical Aquifer Recharge Areas which involve storing, handling, treating, using, producing, recycling, or disposing of hazardous materials or other deleterious substances shall comply with the following standards that apply to the Critical Aquifer Recharge Area in which they are located. Single-family residential uses of hazardous materials or deleterious substances are exempt from the following standards.

2. If a property is located in or straddles more than one Critical Aquifer Recharge Area, the Director of Public Works shall determine which standards shall apply based on an assessment evaluation of the risk posed by the facility or activity. The assessment evaluation shall include, but not be limited to: (a) the location, type, and quantity of the hazardous materials or deleterious substances on the property; (b) the geographic and geologic characteristics of the site; and (c) the type and location of infiltration on the site.

3. Development or redevelopment within Critical Aquifer Recharge Area I and II. Any facility or activity shall implement the following performance standards:

a. Secondary Containment.

i. The owner or operator of any facility or activity shall provide secondary containment for hazardous materials or other deleterious substances in aggregate quantities equal to or greater than 20 gallons liquid or 200 pounds solid or in quantities specified in the Redmond Fire Code, RMC Chapter 15.06, whichever is smaller.

ii. All seams and cracks on Portland cement concrete pad containment or fueling/maintenance areas must be sealed with chemical resistant sealers. Inspect and repair the Portland cement concrete pad annually to ensure the functional integrity of the pad is maintained to prevent fuel and/or chemicals from reaching the ground.

iii. Facilities or activities located in Critical Aquifer Recharge Area II are exempt from secondary containment requirements in item i above for indoor storage of hazardous materials and deleterious substances. Requirements in RMC 15.06 still apply.

b. Vehicle Fueling, vehicle and equipment maintenance facilities, and wrecked vehicle storage facilities shall have the following to control release of hazardous materials to the soil/groundwater during operations:

i. Underground storage tank pits and trenches for fuel piping will be contained with tertiary containment liner and tank pit observation ports shall be installed in a low point in the pit.

ii. Fueling facility shall be staffed with Class 3 trained staff on site at all times during fueling operations.

iii. All vehicle fueling and vehicle and equipment maintenance shall be conducted under cover on a Portland cement concrete or equivalent pad treated with chemical resistant sealer and drain to the sanitary sewer or dead-end sump.

c. Loading and Unloading Areas. Secondary containment or equivalent best management practices, as approved by the City, shall be required at loading and unloading areas that store, handle, treat, use, produce, recycle, or dispose of hazardous materials or other deleterious substances in aggregate quantities equal to or greater than 20 gallons liquid or 200 pounds solid.

d. Stormwater Infiltration Systems. Design and construction of stormwater infiltration systems must address site-specific risks of releases posed by all hazardous materials on-site. These risks may be mitigated by physical design means or equivalent best management practices. Design and construction of said stormwater infiltration systems shall also be in accordance with RMC Chapter 15.24.020.

e. Well construction and operation shall comply with the standards in RMC 15.24.095.

f. Fill Materials. Fill material shall comply with the standards in RMC 15.24.095.

g. Cathodic Protection Wells. Design for cathodic protection wells shall be submitted to the City for review and approval prior to initiation of drilling. Cathodic protection wells shall be constructed such that the following does not occur:

i. Vertical cross-connection of aquifers normally separated by confining geologic units;

ii. Migration of contaminated surface water along improperly sealed well borings or casings;

iii. Introduction of electrolytes or related solutions into the subsurface; and

iv. Any of the above conditions caused by improperly abandoned cathodic protection wells that are no longer in use.

h. Underground Hydraulic Elevator Cylinders. All underground hydraulic elevator pressure cylinders shall be encased in an outer plastic casing constructed of schedule 40 or thicker polyethylene or polyvinyl chloride (PVS) pipe or equivalent. The plastic casing shall be capped at the bottom and all joints shall be solvent or heat welded to ensure water tightness. The neck of the plastic casing shall provide a means of inspection to monitor the annulus between the pressurized hydraulic elevator cylinders and protective plastic casing. Vegetable oil shall be used for hydraulic fluid in elevator cylinders.

4. Relationship of Critical Aquifer Recharge Areas to the Groundwater Protection Incentive Program for Existing Stormwater Infiltration Modifications (RMC 13.07.115).

a. Except as provided in subsection (b) below, the construction or location of stormwater infiltration system modifications to protect groundwater shall not be permitted to alter, expand, or intensify any legal nonconforming use or structure in a manner that increases the degree of nonconformity. However, upon the Technical Committee's approval of a modification to a stormwater infiltration system protective of groundwater, the improvement may be constructed without the property owner having to meet the following City codes:

i. The provisions of RZC 21.64 regarding critical areas buffers, if the footprint of the original system protective of groundwater is located with the same critical area buffer, and it can be demonstrated through the best available science that there will be no significant adverse impacts to the critical area and its buffer;

ii. The provisions of RZC 21.76.100.F.9.b and F.9.c requiring nonconforming structures, landscaping, and pedestrian system areas to be brought into compliance with current building, fire, or land use codes, to the extent that the requirement is triggered by the value or design of the incremental environmental improvement to a system protective of groundwater; and

iii. The provisions of RZC 21.64.050.C.1 prohibiting the redevelopment of certain land uses and activities in Critical Aquifer Recharge Areas I and II.

b. Improvements required through the groundwater protection incentive program in order to mitigate potential stormwater impacts to groundwater may alter, expand, or intensify existing legal nonconforming uses and structures in a way that increases the degree of nonconformity where the Technical Committee determines that no economically, technologically, and environmentally reasonable alternative exists that meets the requirement to

protect groundwater and fulfills the operational needs of the existing development served by the stormwater infiltration system. By way of example and not by way of limitation, groundwater protection incentive program improvements may alter, expand, or intensify the degree of nonconformity of existing landscaping, parking, and covered storage structures that are legally nonconforming, as long as the requirements of this subsection are met.

5. Phase 1 Environmental Site Assessments (ESA) required. Any development or redevelopment project that disturbs 5,000 square feet or more soil in the Critical Aquifer Recharge Area shall include a Phase 1 ESA with the project's Critical Area Report.

6. Monitoring Required at High Risk Sites. Any land use in the Critical Aquifer Recharge Areas that poses a high risk of contaminating groundwater, in the opinion of the City, will be required to be equipped for long term monitoring of groundwater. For example, land uses including fueling are considered high risk.

(Ord. 2704; Ord. 2957; Ord. 2968)

Effective on: 4/27/2019

21.64.06 Geologically Hazardous Areas.

A. Classification and Rating of Geologically Hazardous Areas. To promote consistent application of the standards and requirements of this chapter, geologically hazardous areas within the City of Redmond shall be rated or classified according to their characteristics, function and value, and/or their sensitivity to disturbance.

1. Geologically Hazardous Area Classifications. Geologically hazardous areas shall be classified according to the criteria in this section.

a. Erosion Hazard Areas. Erosion hazard areas are lands or areas underlain by soils identified by the U.S. Department of Agriculture Soil Conservation Service (SCS) as having “severe” or “very severe” rill and inter-rill erosion hazards. This includes, but is not limited to, the following group of soils when they occur on slopes of 15 percent or greater: Alderwood-Kitsap (AkF), Alderwood gravelly sandy loam (AgD), Kitsap silt loam (KpD), Everett (EvD), and Indianola (InD).

b. Landslide Hazard Areas. Landslide hazard areas are areas potentially subject to significant or severe risk of landslides based on a combination of geologic, topographic, and hydrogeologic factors. They include areas susceptible because of any combination of bedrock, soil, slope, slope aspect, structure, hydrology, or other factors. They are areas of the landscape that are

at a high risk of failure or that presently exhibit downslope movement of soil and/or rocks and that are separated from the underlying stationary part of the slope by a definite plane of separation. The plane of separation may be thick or thin and may be composed of multiple failure zones depending on local conditions, including soil type, slope gradient, and groundwater regime.

Landslide hazard areas include:

i. Areas of historic failures, such as:

A. Areas designated as quaternary slumps or landslides on maps published by the United States Geologic Survey (USGS); or

B. Those areas designated by the United States Department of Agriculture (USDA) Soil Conservation Service (SCS) as having a "severe" limitation for building site development.

ii. Areas containing a combination of slopes steeper than 15 percent, springs or groundwater seepage, and hillsides intersecting geologic contacts with a relatively permeable sediment overlying a relatively impermeable sediment or bedrock;

iii. Areas that have shown movement during the Holocene epoch (from 10,000 years ago to the present) or which are underlain or covered by mass wastage debris of that epoch;

iv. Slopes that are parallel or subparallel to planes of weakness in subsurface materials;

v. Slopes having gradients steeper than 80 percent subject to rockfall during seismic shaking;

vi. Areas potentially unstable as a result of rapid stream incision, stream bank erosion, and undercutting by wave action; or

vii. Any area with a slope 40 percent or steeper with a vertical relief of 10 feet or more.

c. Seismic Hazard Areas. Seismic hazard areas are lands subject to severe risk of damage as a result of earthquake-induced ground shaking, slope failure, settlement, soil liquefaction, or surface faulting.

2. Classification of geologically hazardous areas shall be determined by the Committee based on consideration of the following factors:

a. Maps adopted pursuant to this chapter include the landslide hazard area, erosion hazard area, and seismic hazard areas maps, which identify the approximate location and extent of these hazard areas. These maps shall be used as a general guide only for the assistance of property owners and other interested parties; boundaries are generalized. The actual type, extent, and boundaries of geologically hazardous areas shall be determined in the field by a qualified consultant according to the procedures, definitions, and criteria established by this chapter. In the event of any conflict between the critical area location and designation shown on the City's map and the criteria or standards of this section, the criteria and standards shall prevail;

b. Maps published by other governmental agencies such as:

i. USGS landslide hazard and seismic hazard maps;

ii. Department of Natural Resources (DNR) seismic hazard maps for western Washington and slope stability maps;

c. Application of the criteria contained in these regulations; and

d. Consideration of the technical reports submitted by qualified consultants in connection with applications subject to these regulations.

B. Landslide Hazard Area Buffers.

1. Landslide hazard area buffers shall be measured from the top and toe, and along sides of the slope.

2. Minimum Landslide Hazard Area Buffer. Required buffers shall be 50 feet. The width of the buffer shall reflect the sensitivity of the landslide hazard area in question and the types and density of uses proposed on or adjacent to the geologic hazard. In determining the appropriate buffer width, the Committee shall consider the recommendations contained in any technical report required by these regulations and prepared by an applicant's qualified consultant.

3. Buffer Reduction. Buffers may be reduced to a minimum of 15 feet when a qualified professional demonstrates through technical studies that the reduction will adequately protect the proposed and surrounding development from the critical landslide hazard.

4. Increased Buffer. The buffer may be increased where the Technical Committee determines a larger buffer is necessary to prevent risk of damage to proposed and existing development.

C. Alteration of Geologically Hazardous Areas – Generally. Alteration of geologically hazardous areas or their established buffers may only be permitted subject to the criteria in RZC 21.64.050.D, RZC 21.64.020.E, RZC 21.64.030.C, RZC 21.64.040.B, RZC 21.64.050.B, RZC 21.64.060.D, and RZC 21.76.070.E.

D. Alteration of Geologically Hazardous Areas.

1. The City shall approve, condition, or deny proposals in a geologically hazardous area as appropriate based upon the effective mitigation of risks posed to property, health, and safety. The objective of mitigation measures shall be to render a site containing a geologically hazardous site as safe as one not containing such hazard. Conditions may include limitations of proposed uses, modification of density, alteration of site layout, and other appropriate changes to the proposal. Where potential impacts cannot be effectively mitigated, or where the risk to public health, safety and welfare, public or private property, or important natural resources is significant notwithstanding mitigation, the proposal shall be denied.

2. Landslide Hazard Areas. Development shall be prohibited in landslide hazard areas except as noted below:

a. Pin pilings or footings for decks are permitted provided that they do not impact the stability of the slope, as demonstrated by geotechnical studies; and

b. The installation and construction of streets and/or utilities, subject to the criteria and process set forth in RZC 21.76.070.E, Alteration of Geologic Hazard Areas.

E. Geologically Hazardous Area Performance Standards.

1. Relevant performance standards from RZC 21.64.020.F, RZC 21.64.020.G, and RZC 21.64.030.D, as determined by the Committee, shall be incorporated into mitigation plans.

2. Development within a geologically hazardous area shall meet the following basic requirements unless it can be demonstrated that an alternative design that deviates from one or more of these standards provides equivalent or greater long-term slope stability. The following performance standards shall be reflected in proposals within landslide and erosion hazard areas:

a. Geotechnical studies shall be prepared by a qualified consultant to identify and evaluate potential hazards and to formulate mitigation measures;

b. Construction methods will reduce or not adversely affect geologic hazards;

c. Structures and improvements shall minimize alterations to the natural contour of the slope and foundations shall be tiered where possible to conform to existing topography;

d. Structures and improvements shall be located to preserve the most critical portion of the site and its natural landforms and vegetation;

e. Structures and improvements shall be clustered to avoid geologically hazardous areas;

f. Unless otherwise provided or as part of an approved alteration, removal of vegetation from an erosion or landslide hazard area or related buffer shall be prohibited;

g. Development shall be designed to minimize impervious surface coverage;

h. Disturbed areas should be replanted as soon as feasible pursuant to an approved landscape plan;

i. Clearing and grading regulations as set forth by the City shall be followed;

j. Use of retaining walls that allow maintenance of existing natural slope areas are preferred over graded artificial slopes;

k. Temporary erosion and sedimentation controls, pursuant to an approved plan, shall be implemented during construction;

l. A master drainage plan shall be prepared for large projects as required by the City Engineer;

m. A monitoring program shall be prepared for construction activities permitted in geologically hazardous areas;

n. Development shall not increase instability or create a hazard to the site or adjacent properties, or result in a significant increase in sedimentation or erosion; and

o. Point discharges from surface water facilities and roof drains onto or upstream from an erosion or landslide hazard area shall be prohibited except as follows:

i. Conveyed via continuous storm pipe downslope to a point where there are no erosion hazard areas downstream from the discharge;

ii. Discharged at flow durations matching predeveloped conditions, with adequate energy dissipation, into existing channels that previously conveyed stormwater runoff in the predevelopment state; or

iii. Dispersed discharge upslope of the steep slope onto a low-gradient undisturbed buffer demonstrated to be adequate to infiltrate all surface and stormwater runoff, and where it can be demonstrated that such discharge will not increase the saturation of the slope.

Effective on: 4/16/2011

21.64.070 Procedures.

A. Procedural Provisions.

1. Interpretation and Conflicts. Any question regarding interpretation of these regulations shall be resolved pursuant to the procedures set forth in RZC Article VI, Review Procedures.

2. Penalties and Enforcement. Compliance with these regulations and penalties for their violation shall be enforced pursuant to the procedures set forth in RZC Article VI.

3. Appeals from Permit Decisions. Appeals from permit decisions shall be governed by the procedures set forth in RZC Article VI.

B. Severability. If any provision of these regulations or its application to any person or circumstance is held invalid by a court of competent jurisdiction, the remainder of these regulations or the application to other persons or circumstances shall not be affected.

Effective on: 4/16/2011